

99274Cseq  
SEQUENCE LISTING

<110> Boutand, Ariel

<120> Recombinant Laminin 5

<130> 99-274-C

<140> 09/560,385

<141> 2000-04-28

<160> 36

<170> PatentIn Ver. 2.0

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<211> 5280

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (18)..(5189)

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Cys Asp Gly Gln Trp His Ser Val Ala Val Thr Ile Lys Gln His Ile	

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cca Pro 1025	aaa Lys	gag Glu	aga Arg	gga Gly 1030	gtt Val	gga Gly	gac Asp	gcc Ala	ata Ile 1035	aac Asn	aac Asn	ggc Gly	aga Arg	gac Asp	cat His 1040	3120
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Thr Tyr Tyr Leu Gly Gly Ile Pro Ile Ala Ile Arg Glu Arg Phe Asn	
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Ile Ser Thr Pro Ala Phe Arg Gly Cys Met Lys Asn Leu Lys Lys Thr	
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Ser Glu Asp Trp Lys Leu Val Arg Ser Ala Ser Phe Ser Arg Gly Gly	
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Gln Thr Tyr Met Asp Gly Leu Leu His Tyr Val Ser Val Ile Ser Asp	
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	1295

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Gln Thr Thr Ser Ser Arg Gly Leu Val Phe His Thr Gly Thr Lys Asn	
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 Tyr Arg Asp His Lys Gly Leu Tyr Thr Gly Arg Cys Val Pro Cys Asn  
 35 40 45  
 Cys Asn Gly His Ser Asn Gln Cys Gln Asp Gly Ser Gly Ile Cys Val  
 50 55 60  
 Asn Cys Gln His Asn Thr Ala Gly Glu His Cys Glu Arg Cys Gln Glu  
 65 70 75 80



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Pro His Thr Asn Ser Phe Ala Thr Gly Cys Val Val Asn Gly Gly Asp  
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Cys Ala Pro Gly Tyr Phe Gly Asn Pro Gln Lys Phe Gly Gly Ser Cys  
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Gln Pro Cys Ser Cys Asn Ser Asn Gly Gln Leu Gly Ser Cys His Pro  
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Leu Thr Gly Asp Cys Ile Asn Gln Glu Pro Lys Asp Ser Ser Pro Ala  
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Glu Glu Cys Asp Asp Cys Asp Ser Cys Val Met Thr Leu Leu Asn Asp  
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Leu Ala Thr Met Gly Glu Gln Leu Arg Leu Val Lys Ser Gln Leu Gln  
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Gly Leu Ser Ala Ser Ala Gly Leu Leu Glu Gln Met Arg His Met Glu  
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Thr Gln Ala Lys Asp Leu Arg Asn Gln Leu Leu Asn Tyr Arg Ser Ala  
225 230 235 240

Ile Ser Asn His Gly Ser Lys Ile Glu Gly Leu Glu Arg Glu Leu Thr  
245 250 255

Asp Leu Asn Gln Glu Phe Glu Thr Leu Gln Glu Lys Ala Gln Val Asn  
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Ser Arg Lys Ala Gln Thr Leu Asn Asn Asn Val Asn Arg Ala Thr Gln  
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Ser Ala Lys Glu Leu Asp Val Lys Ile Lys Asn Val Ile Arg Asn Val  
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His Ile Leu Leu Lys Gln Ile Ser Gly Thr Asp Gly Glu Gly Asn Asn  
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Val Pro Ser Gly Asp Phe Ser Arg Glu Trp Ala Glu Ala Gln Arg Met  
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Ser Ser Pro Ala Glu Glu Cys Asp Asp Cys Asp Ser Cys Val Met Thr	
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Leu Leu Asn Asp Leu Ala Thr Met Gly Glu Gln Leu Arg Leu Val Lys	
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Ser Gln Leu Gln Gly Leu Ser Ala Ser Ala Gly Leu Leu Glu Gln Met	
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Tyr	Arg	Ser	Ala	Ile	Ser	Asn	His	Gly	Ser	Lys	Ile	Glu	Gly	Leu	Glu	
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Arg	Glu	Leu	Thr	Asp	Leu	Asn	Gln	Glu	Phe	Glu	Thr	Leu	Gln	Glu	Lys	
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Ile	Arg	Asn	Val	His	Ile	Leu	Leu	Lys	Gln	Ile	Ser	Gly	Thr	Asp	Gly	
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Glu	Gly	Asn	Asn	Val	Pro	Ser	Gly	Asp	Phe	Ser	Arg	Glu	Trp	Ala	Glu	
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Ala	Gln	Arg	Met	Met	Arg	Glu	Leu	Arg	Asn	Arg	Asn	Phe	Gly	Lys	His	
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Leu	Arg	Glu	Ala	Glu	Ala	Asp	Lys	Arg	Glu	Ser	Gln	Leu	Leu	Leu	Asn	
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Ala	Asn	Ser	Ile	Arg	Asp	Ser	Leu	Asn	Glu	Tyr	Glu	Ala	Lys	Leu	Ser	
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gac	ctt	cgt	gct	cgg	ctg	cag	gag	gca	gct	gcc	caa	gcc	aag	cag	gca	1296
Asp	Leu	Arg	Ala	Arg	Leu	Gln	Glu	Ala	Ala	Ala	Gln	Ala	Lys	Gln	Ala	
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Asn	Gly	Leu	Asn	Gln	Glu	Asn	Glu	Arg	Ala	Leu	Gly	Ala	Ile	Gln	Arg	
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Gln	Val	Lys	Glu	Ile	Asn	Ser	Leu	Gln	Ser	Asp	Phe	Thr	Lys	Tyr	Leu	
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gaa Glu 610	gcc Ala	aag Lys	atg Met	aca Thr	caa Gln	aag Lys 615	aag Lys	cta Leu	aag Lys	caa Gln	gaa Glu 620	gtc Val	agt Ser	cca Pro	gct Ala	1872
ctc Leu 625	aac Asn	aac Asn	cta Leu	cag Gln	caa Gln 630	acc Thr	ctg Leu	aat Asn	att Ile	gtg Val 635	aca Thr	gtt Val	cag Gln	aaa Lys	gaa Glu 640	1920
gtg Val	ata Ile	gac Asp	acc Thr	aat Asn 645	ctc Leu	aca Thr	act Thr	ctc Leu	cga Arg 650	gat Asp	ggg Gly	ctt Leu	cat His	ggg Gly 655	ata Ile	1968
cag Gln	aga Arg	ggg Gly	gat Asp 660	att Ile	gat Asp	gct Ala	atg Met	atc Ile 665	agt Ser	agt Ser	gca Ala	aag Lys	agc Ser 670	atg Met	gtc Val	2016
aga Arg	aag Lys	gcc Ala 675	aac Asn	gac Asp	atc Ile	aca Thr	gat Asp 680	gag Glu	gtt Val	ctg Leu	gat Asp	ggg Gly 685	ctc Leu	aac Asn	ccc Pro	2064
atc Ile 690	cag Gln	aca Thr	gat Asp	gtg Val	gaa Glu	aga Arg 695	att Ile	aag Lys	gac Asp	acc Thr	tat Tyr 700	ggg Gly	agg Arg	aca Thr	cag Gln	2112
aac Asn 705	gaa Glu	gac Asp	ttc Phe	aaa Lys	aag Lys 710	gct Ala	ctg Leu	act Thr	gat Asp	gca Ala 715	gat Asp	aac Asn	tcg Ser	gtg Val	aat Asn 720	2160
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aac Asn	caa Gln	cag Gln	ctg Leu	ttg Leu	ccc Pro	ttg Leu	gga Gly	aac Asn	atc Ile	tct Ser	gac Asp	aac Asn	atg Met	gac Asp	aga Arg	2256



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gtc Val	ccc Pro 770	atg Met	agg Arg	ttc Phe	aat Asn	ggt Gly 775	aaa Lys	tct Ser	gga Gly	gtc Val	gaa Glu 780	gtc Val	cga Arg	ctg Leu	cca Pro	2352
aat Asn 785	gac Asp	ctg Leu	gaa Glu	gat Asp	ttg Leu 790	aaa Lys	gga Gly	tat Tyr	aca Thr	tct Ser 795	ctg Leu	tcc Ser	ttg Leu	ttt Phe	ctc Leu 800	2400
caa Gln	agg Arg	ccc Pro	aac Asn	tca Ser 805	aga Arg	gaa Glu	aat Asn	ggg Gly	ggt Gly 810	act Thr	gag Glu	aat Asn	atg Met	ttt Phe 815	gtg Val	2448
atg Met	tac Tyr	ctt Leu	gga Gly 820	aat Asn	aaa Lys	gat Asp	gcc Ala	tcc Ser 825	cgg Arg	gac Asp	tac Tyr	atc Ile	ggc Gly 830	atg Met	gca Ala	2496
gtt Val	gtg Val	gat Asp 835	ggc Gly	cag Gln	ctc Leu	acc Thr	tgt Cys 840	gtc Val	tac Tyr	aac Asn	ctg Leu	ggg Gly 845	gac Asp	cgt Arg	gag Glu	2544
gct Ala	gaa Glu 850	ctc Leu	caa Gln	gtg Val	gac Asp	cag Gln 855	atc Ile	ttg Leu	acc Thr	aag Lys	agt Ser 860	gag Glu	act Thr	aag Lys	gag Glu	2592
gca Ala 865	gtt Val	atg Met	gat Asp	cgg Arg	gtg Val 870	aaa Lys	ttt Phe	cag Gln	aga Arg	att Ile 875	tat Tyr	cag Gln	ttt Phe	gca Ala	agg Arg 880	2640
ctt Leu	aat Asn	tac Tyr	acc Thr	aaa Lys 885	gga Gly	gcc Ala	aca Thr	tcc Ser	agt Ser 890	aaa Lys	cca Pro	gaa Glu	aca Thr	ccc Pro 895	gga Gly	2688
gtc Val	tat Tyr	gac Asp	atg Met 900	gat Asp	ggt Gly	aga Arg	aat Asn	agc Ser 905	aat Asn	aca Thr	ctc Leu	ctt Leu	aat Asn 910	ttg Leu	gat Asp	2736
cct Pro	gaa Glu	aat Asn 915	gtt Val	gta Val	ttt Phe	tat Tyr	gtt Val 920	gga Gly	ggt Gly	tac Tyr	cca Pro	cct Pro 925	gat Asp	ttt Phe	aaa Lys	2784
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Leu Arg Leu Gly Gly Ser Asn Phe Glu Gly Cys Ile Ser Asn Val Phe	
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5433

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&lt;211&gt; 1713

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 6

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210 215 220Ser Gln Leu Gln Gly Leu Ser Ala Ser Ala Gly Leu Leu Glu Gln Met  
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 Arg Ile Arg Thr Trp Gln Lys Thr His Gln Gly Glu Asn Asn Gly Leu  
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 Arg Lys Ala Asn Asp Ile Thr Asp Glu Val Leu Asp Gly Leu Asn Pro  
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Gln Ala Asn His Gly Ala Leu Gln Phe Gly Asp Ile Pro Thr Ser His  
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Val Phe Ala Leu Gly Thr Asp Gly Lys Lys Leu Arg Ile Lys Ser Lys  
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Gly Glu Lys Gly Arg Leu Val Val Asp Gly Leu Arg Ala Arg Glu Gly  
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Ser Leu Pro Gly Asn Ser Thr Ile Ser Ile Arg Ala Pro Val Tyr Leu  
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Gly Ser Pro Pro Ser Gly Lys Pro Lys Ser Leu Pro Thr Asn Ser Phe  
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Val Gly Cys Leu Lys Asn Phe Gln Leu Asp Ser Lys Pro Leu Tyr Thr  
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Pro Ser Ser Ser Phe Gly Val Ser Ser Cys Leu Gly Gly Pro Leu Glu  
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Lys Gly Ile Tyr Phe Ser Glu Glu Gly Gly His Val Val Leu Ala His  
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Ser Val Leu Leu Gly Pro Glu Phe Lys Leu Val Phe Ser Ile Arg Pro  
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Ser Gly Ala Gly Gly Thr Ser Thr Ser Val Thr Pro Lys Gln Ser Leu  
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 Ala Ser Tyr Val Glu Phe Arg Pro Ser Gln Gly Cys Ser Pro Gly Tyr  
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 Tyr Arg Asp His Lys Gly Leu Tyr Thr Gly Arg Cys Val Pro Cys Asn  
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 Cys Asn Gly His Ser Asn Gln Cys Gln Asp Gly Ser Gly Ile Cys Val  
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 Asn Cys Gln His Asn Thr Ala Gly Glu His Cys Glu Arg Cys Gln Glu  
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 Gly Tyr Tyr Gly Asn Ala Val His Gly Ser Cys Arg Ala Cys Pro Cys  
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 Pro His Thr Asn Ser Phe Ala Thr Gly Cys Val Val Asn Gly Gly Asp  
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gaa	gaa	tgt	gat	gat	tgc	gac	agc	tgt	gtg	atg	acc	ctc	ctg	aac	gac	576
Glu	Glu	Cys	Asp	Asp	Cys	Asp	Ser	Cys	Val	Met	Thr	Leu	Leu	Asn	Asp	
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Leu	Ala	Thr	Met	Gly	Glu	Gln	Leu	Arg	Leu	Val	Lys	Ser	Gln	Leu	Gln	
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Gly	Leu	Ser	Ala	Ser	Ala	Gly	Leu	Leu	Glu	Gln	Met	Arg	His	Met	Glu	
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Thr	Gln	Ala	Lys	Asp	Leu	Arg	Asn	Gln	Leu	Leu	Asn	Tyr	Arg	Ser	Ala	
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Ile	Ser	Asn	His	Gly	Ser	Lys	Ile	Glu	Gly	Leu	Glu	Arg	Glu	Leu	Thr	
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Asp	Leu	Asn	Gln	Glu	Phe	Glu	Thr	Leu	Gln	Glu	Lys	Ala	Gln	Val	Asn	
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Ser	Ala	Lys	Glu	Leu	Asp	Val	Lys	Ile	Lys	Asn	Val	Ile	Arg	Asn	Val	
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His	Ile	Leu	Leu	Lys	Gln	Ile	Ser	Gly	Thr	Asp	Gly	Glu	Gly	Asn	Asn	
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Val	Pro	Ser	Gly	Asp	Phe	Ser	Arg	Glu	Trp	Ala	Glu	Ala	Gln	Arg	Met	
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Met	Arg	Glu	Leu	Arg	Asn	Arg	Asn	Phe	Gly	Lys	His	Leu	Arg	Glu	Ala	
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Glu	Ala	Asp	Lys	Arg	Glu	Ser	Gln	Leu	Leu	Leu	Asn	Arg	Ile	Arg	Thr	
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tgg	cag	aaa	acc	cac	cag	ggg	gag	aac	aat	ggg	ctt	gct	aac	agt	atc	1152
Trp	Gln	Lys	Thr	His	Gln	Gly	Glu	Asn	Asn	Gly	Leu	Ala	Asn	Ser	Ile	
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Ile	Asn	Ser	Leu	Gln	Ser	Asp	Phe	Thr	Lys	Tyr	Leu	Thr	Thr	Ala	Asp	
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Ser	Ser	Leu	Leu	Gln	Thr	Asn	Ile	Ala	Leu	Gln	Leu	Met	Glu	Lys	Ser	
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Glu	Leu	Ser	Asp	Lys	Val	Arg	Glu	Leu	Ser	Arg	Ser	Ala	Gly	Lys	Thr	
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Ser	Leu	Val	Glu	Glu	Ala	Glu	Lys	His	Ala	Arg	Ser	Leu	Gln	Glu	Leu	
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Val	Arg	Cys	Ala	Val	Asp	Ala	Ala	Thr	Ala	Tyr	Glu	Asn	Ile	Leu	Asn	
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Lys	Thr	Leu	Ser	Ser	Asn	Ser	Asp	Lys	Leu	Leu	Asn	Glu	Ala	Lys	Met	
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Thr	Gln	Lys	Lys	Leu	Lys	Gln	Glu	Val	Ser	Pro	Ala	Leu	Asn	Asn	Leu	
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Gln	Gln	Thr	Leu	Asn	Ile	Val	Thr	Val	Gln	Lys	Glu	Val	Ile	Asp	Thr	
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aat	ctc	aca	act	ctc	cga	gat	ggc	ctt	cat	ggg	ata	cag	aga	ggc	gat	1920
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aaa Lys 865	gga Gly	gcc Ala	aca Thr	tcc Ser	agt Ser 870	aaa Lys	cca Pro	gaa Glu	aca Thr	ccc Pro 875	gga Gly	gtc Val	tat Tyr	gac Asp	atg Met 880	2640
gat Asp	ggt Gly	aga Arg	aat Asn	agc Ser	aat Asn	aca Thr	ctc Leu	ctt Leu	aat Asn	ttg Leu	gat Asp	cct Pro	gaa Glu	aat Asn	gtt Val	2688

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<212> PRT

<213> Homo sapiens

<400> 8

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Tyr Arg Asp His Lys Gly Leu Tyr Thr Gly Arg Cys Val Pro Cys Asn  
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Cys Asn Gly His Ser Asn Gln Cys Gln Asp Gly Ser Gly Ile Cys Val  
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Asn Cys Gln His Asn Thr Ala Gly Glu His Cys Glu Arg Cys Gln Glu  
 65 70 75 80

Gly Tyr Tyr Gly Asn Ala Val His Gly Ser Cys Arg Ala Cys Pro Cys  
 85 90 95

Pro His Thr Asn Ser Phe Ala Thr Gly Cys Val Val Asn Gly Gly Asp  
 100 105 110

Val Arg Cys Ser Cys Lys Ala Gly Tyr Thr Gly Thr Gln Cys Glu Arg  
 115 120 125

Cys Ala Pro Gly Tyr Phe Gly Asn Pro Gln Lys Phe Gly Gly Ser Cys  
 130 135 140

Gln Pro Cys Ser Cys Asn Ser Asn Gly Gln Leu Gly Ser Cys His Pro  
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Leu Thr Gly Asp Cys Ile Asn Gln Glu Pro Lys Asp Ser Ser Pro Ala  
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99274Cseq

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 Gly Leu Ser Ala Ser Ala Gly Leu Leu Glu Gln Met Arg His Met Glu  
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 Thr Gln Ala Lys Asp Leu Arg Asn Gln Leu Leu Asn Tyr Arg Ser Ala  
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 Ile Ser Asn His Gly Ser Lys Ile Glu Gly Leu Glu Arg Glu Leu Thr  
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 His Ile Leu Leu Lys Gln Ile Ser Gly Thr Asp Gly Glu Gly Asn Asn  
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Leu	Pro	Leu	Gly	Asn	Ile	Ser	Asp	Asn	Met	Asp	Arg	Ile	Arg	Glu	Leu
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Asp Gly Arg Asn Ser Asn Thr Leu Leu Asn Leu Asp Pro Glu Asn Val  
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Val Phe Tyr Val Gly Gly Tyr Pro Pro Asp Phe Lys Leu Pro Ser Arg  
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Glu Asn Val Leu Ser Leu Tyr Asn Phe Lys Lys Thr Phe Asn Leu Asn  
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Thr Thr Glu Val Glu Pro Cys Arg Arg Arg Lys Glu Glu Ser Asp Lys  
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Asn Tyr Phe Glu Gly Thr Gly Tyr Ala Arg Val Pro Thr Gln Pro His  
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Ala Pro Ile Pro Thr Phe Gly Gln Thr Ile Gln Thr Thr Val Asp Arg  
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Gly Leu Leu Phe Phe Ala Glu Asn Gly Asp Arg Phe Ile Ser Leu Asn  
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Ile Glu Asp Gly Lys Leu Met Val Arg Tyr Lys Leu Asn Ser Glu Leu  
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Pro Lys Glu Arg Gly Val Gly Asp Ala Ile Asn Asn Gly Arg Asp His  
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Ser Gly Lys Pro Lys Ser Leu Pro Thr Asn Ser Phe Val Gly Cys Leu  
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Ser	Thr	Pro	Ala	Phe	Gln	Gly	Cys	Met	Lys	Asn	Leu	Lys	Lys	Thr	Ser		
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ggg	gtt	gtc	agg	ttg	aat	gat	act	gtg	ggt	gta	acc	aag	aag	tgc	tca	3514	
Gly	Val	Val	Arg	Leu	Asn	Asp	Thr	Val	Gly	Val	Thr	Lys	Lys	Cys	Ser		
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Glu	Asp	Trp	Lys	Leu	Val	Arg	Thr	Ala	Ser	Phe	Ser	Arg	Gly	Gly	Gln		
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atg	agc	ttt	aca	aac	ttg	gac	gtg	ccc	tcg	act	gac	cgc	ttc	cag	ctc	3610	
Met	Ser	Phe	Thr	Asn	Leu	Asp	Val	Pro	Ser	Thr	Asp	Arg	Phe	Gln	Leu		
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tcc	ttt	ggg	ttt	cag	acc	ttt	caa	ccc	agt	ggc	aca	ctg	ctc	aat	cat	3658	
Ser	Phe	Gly	Phe	Gln	Thr	Phe	Gln	Pro	Ser	Gly	Thr	Leu	Leu	Asn	His		
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cag	acg	cgg	aca	agc	agc	ctg	ctg	gtc	acc	ctg	gaa	gat	ggg	cac	att	3706	
Gln	Thr	Arg	Thr	Ser	Ser	Leu	Leu	Val	Thr	Leu	Glu	Asp	Gly	His	Ile		
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gag	ttg	agc	act	agg	gac	agc	aac	atc	cca	att	ttc	aag	tct	cca	ggg	3754	
Glu	Leu	Ser	Thr	Arg	Asp	Ser	Asn	Ile	Pro	Ile	Phe	Lys	Ser	Pro	Gly		
			1220					1225					1230				
acc	tac	atg	gac	ggt	tta	ctg	cat	cat	gta	tct	gta	ata	agt	gac	acc	3802	
Thr	Tyr	Met	Asp	Gly	Leu	Leu	His	His	Val	Ser	Val	Ile	Ser	Asp	Thr		
			1235			1240						1245					
tca	ggt	ctc	cgc	ctt	ctc	atc	gat	gac	cag	gtc	ctg	aga	agg	aac	cag	3850	
Ser	Gly	Leu	Arg	Leu	Leu	Ile	Asp	Asp	Gln	Val	Leu	Arg	Arg	Asn	Gln		
			1250			1255					1260						
agg	ctt	cct	agc	ttc	tct	aac	gcc	cag	cag	tcg	ctc	cgc	ctt	gga	gga	3898	
Arg	Leu	Pro	Ser	Phe	Ser	Asn	Ala	Gln	Gln	Ser	Leu	Arg	Leu	Gly	Gly		
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ggt	cat	ttc	gag	ggt	tgt	atc	agc	aat	gtt	tta	gtc	caa	agg	ttt	tca	3946	
Gly	His	Phe	Glu	Gly	Cys	Ile	Ser	Asn	Val	Leu	Val	Gln	Arg	Phe	Ser		
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cag	agt	cca	gaa	gtc	ctg	gat	ctg	gcc	agt	aaa	tct	acc	aag	aag	gat	3994	
Gln	Ser	Pro	Glu	Val	Leu	Asp	Leu	Ala	Ser	Lys	Ser	Thr	Lys	Lys	Asp		
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Ala Ser Leu Gly Gly Cys Ser Leu Asn Lys Pro Pro Phe Leu Met Leu	
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ttt aaa agt ccc aag aga ttt aac aag ggc cgg att ttc aat gtt aat	4090
Phe Lys Ser Pro Lys Arg Phe Asn Lys Gly Arg Ile Phe Asn Val Asn	
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cag ctg atg caa gat gca cct cag gcc aca agg agc aca gag gct tgg	4138
Gln Leu Met Gln Asp Ala Pro Gln Ala Thr Arg Ser Thr Glu Ala Trp	
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caa gat ggg agg tcc tgc cta cca cct ctg aac acc aag gcc tct cac	4186
Gln Asp Gly Arg Ser Cys Leu Pro Pro Leu Asn Thr Lys Ala Ser His	
1365 1370 1375	
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Arg Ala Leu Gln Phe Gly Asp Ser Pro Thr Ser His Leu Leu Lys	
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ctt ccc cag gaa ctg ctg aaa cct agg tca cag ttt tct tta gac ata	4282
Leu Pro Gln Glu Leu Leu Lys Pro Arg Ser Gln Phe Ser Leu Asp Ile	
1395 1400 1405	
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Gln Thr Thr Ser Pro Lys Gly Leu Val Phe Tyr Ala Gly Thr Lys Asp	
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Ser Phe Leu Ala Leu Tyr Val Ala Asp Gly Arg Val Val Phe Ala Leu	
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Gly Ala Gly Gly Lys Lys Leu Arg Leu Arg Ser Lys Glu Arg Tyr His	
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Asp Gly Lys Trp His Thr Val Val Phe Gly Leu Asn Gly Gly Lys Ala	
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Arg Leu Val Val Asp Gly Leu Arg Ala Gln Glu Gly Ser Leu Pro Gly	
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Asn Ser Thr Ile Ser Pro Arg Glu Gln Val Tyr Leu Gly Leu Pro Leu	
1490 1495 1500	
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Ser Arg Lys Pro Lys Ser Leu Pro Gln His Ser Phe Val Gly Cys Leu	
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Arg Asp Phe Gln Leu Asn Ser Lys Pro Leu Asp Ser Pro Ser Ala Arg	
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Phe Gly Val Ser Pro Cys Leu Gly Gly Ser Leu Glu Lys Gly Ile Tyr	
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ttc tcc caa gga gga ggc cat gtg atc cta gcc aat tct gtg tcc ttg	4762
Phe Ser Gln Gly Gly Gly His Val Ile Leu Ala Asn Ser Val Ser Leu	
1555 1560 1565	

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Gly Pro Glu Leu Lys Leu Thr Phe Ser Ile Arg Pro Arg Ser Leu Thr	
1570 1575 1580	
ggg gtc tta ata cac gtc gga agt caa tct gga cag cgc tta agt gtg	4858
Gly Val Leu Ile His Val Gly Ser Gln Ser Gly Gln Arg Leu Ser Val	
1585 1590 1595 1600	
tac atg gag gca gga aag gtc aca acc tct gtg agc agt gat gca gga	4906
Tyr Met Glu Ala Gly Lys Val Thr Thr Ser Val Ser Ser Asp Ala Gly	
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Gly Ser Val Thr Ser Ile Thr Pro Lys Gln Ser Leu Cys Asp Gly Gln	
1620 1625 1630	
tgg cac tcg gtg gca gtc tcc att aaa cag cgc atc ctg cat cta gaa	5002
Trp His Ser Val Ala Val Ser Ile Lys Gln Arg Ile Leu His Leu Glu	
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ctg gat aca gac agt agc tac aca gtc gca cca ctt tcc ttc tca cca	5050
Leu Asp Thr Asp Ser Ser Tyr Thr Val Ala Pro Leu Ser Phe Ser Pro	
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aac agc acc cga ggg tca ctg cac gtc gga ggt gtc cca gac aaa ttg	5098
Asn Ser Thr Arg Gly Ser Leu His Val Gly Gly Val Pro Asp Lys Leu	
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aaa atg ctt aca ctc cct gtg tgg aac tca ttt ttt ggc tgt ctg aag	5146
Lys Met Leu Thr Leu Pro Val Trp Asn Ser Phe Phe Gly Cys Leu Lys	
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aat att caa gtc aac cat gtc cct gtc ccc atc aca gaa gcc aca gaa	5194
Asn Ile Gln Val Asn His Val Pro Val Pro Ile Thr Glu Ala Thr Glu	
1700 1705 1710	
gtc caa ggt tct gtc agc ctg aat ggc tgc cct gac cac taaccctaca	5243
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<213> Rattus norvegicus

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Gln Arg Val Ala Phe Leu Gln His Pro Gly Gln Asn His Leu Gln Ala  
35 40 45

Ser Tyr Met Glu Leu Arg Pro Ser Gln Gly Cys Arg Pro Gly Tyr Tyr  
50 55 60

Arg Asp Ile Lys Ser Phe Pro Ala Gly Arg Ser Val Pro Cys Asn Cys



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410

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Leu	Gln	Glu	Ala	Ala	Ala	Gln	Gly	Lys	Gln	Ala	Thr	Gly	Leu	Asn	His														
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Glu	Asn	Glu	Gly	Val	Leu	Gly	Ala	Ile	Gln	Arg	Gln	Met	Lys	Glu	Met														
	450					455					460																		
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Ser	Leu	Leu	Gln	Thr	Asn	Ser	Leu	Leu	Gln	Arg	Met	Asp	Thr	Ser	Gln														
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Lys	Glu	Tyr	Glu	Ser	Leu	Ala	Ala	Ala	Leu	Asn	Gly	Ala	Arg	Gln	Glu														
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Leu	Asn	Asp	Gln	Val	Arg	Glu	Leu	Ser	Arg	Ser	Gly	Gly	Lys	Ala	Pro														
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Leu	Val	Ala	Glu	Ala	Glu	Lys	His	Ala	Gln	Ser	Leu	Gln	Glu	Leu	Ala														
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Thr	Leu	Ser	Ser	Asp	Ser	Glu	Glu	Leu	Leu	Asn	Glu	Ala	Lys	Met	Thr														
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Arg	Lys	Arg	Leu	Gln	Gln	Glu	Ile	Asn	Pro	Ala	Leu	Asn	Ser	Leu	Gln														
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Gln	Thr	Leu	Lys	Thr	Val	Ser	Val	Gln	Lys	Asp	Leu	Leu	Asp	Ala	Asn														
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Val	Thr	Ala	Val	Arg	Asn	Asp	Leu	Arg	Gly	Ile	Gln	Arg	Gly	Asp	Ile														
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Asp	Ser	Val	Val	Ser	Gly	Ala	Lys	Ser	Met	Val	Arg	Lys	Ala	Asn	Gly														
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	690					695					700																		
Gly	Arg	Ile	Lys	Asp	Ser	Tyr	Gly	Ser	Thr	Arg	His	Glu	Asp	Phe	Asn														
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Lys	Ala	Leu	Ile	Asp	Ala	Asn	Asn	Ser	Val	Lys	Lys	Leu	Thr	Lys	Lys														
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Leu	Pro	Asp	Leu	Phe	Val	Lys	Ile	Glu	Ser	Ile	Asn	Gln	Gln	Leu	Leu														

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 Thr Gln Ala Arg Asp Ala Ala Asn Lys Val Ala Ile Pro Met Arg Phe  
 770 775 780  
 Asn Gly Lys Ser Gly Val Glu Val Arg Leu Pro Asn Asp Leu Glu Asp  
 785 790 795 800  
 Leu Lys Gly Tyr Thr Ser Leu Ser Leu Phe Leu Gln Arg Pro Asp Leu  
 805 810 815  
 Arg Glu Asn Gly Gly Thr Glu Asp Met Phe Val Met Tyr Leu Gly Asn  
 820 825 830  
 Lys Asp Ala Ser Lys Asp Tyr Ile Gly Met Ala Val Val Asp Gly Gln  
 835 840 845  
 Leu Thr Cys Val Tyr Asn Leu Gly Asp Arg Glu Ala Glu Val Gln Ile  
 850 855 860  
 Asp Gln Val Leu Thr Glu Ser Glu Ser Gln Glu Ala Val Met Asp Arg  
 865 870 875 880  
 Val Lys Phe Gln Arg Ile Tyr Gln Phe Ala Lys Leu Asn Tyr Thr Lys  
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 Glu Ala Thr Ser Asn Lys Pro Lys Ala Pro Ala Val Tyr Asp Leu Glu  
 900 905 910  
 Gly Gly Ser Ser Asn Thr Leu Leu Asn Leu Asp Pro Glu Asp Ala Val  
 915 920 925  
 Phe Tyr Val Gly Gly Tyr Pro Pro Asp Phe Glu Leu Pro Ser Arg Leu  
 930 935 940  
 Arg Phe Pro Pro Tyr Lys Gly Cys Ile Glu Leu Asp Asp Leu Asn Glu  
 945 950 955 960  
 Asn Val Leu Ser Leu Tyr Asn Phe Lys Thr Thr Phe Asn Leu Asn Thr  
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 Thr Glu Val Glu Pro Cys Arg Arg Arg Lys Glu Glu Ser Asp Lys Asn  
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 Tyr Phe Glu Gly Thr Gly Tyr Ala Arg Ile Pro Thr Gln Pro Asn Ala  
 995 1000 1005  
 Pro Phe Pro Asn Phe Ile Gln Thr Ile Gln Thr Thr Val Asp Arg Gly  
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 Leu Leu Phe Phe Ala Glu Asn Gln Asp Asn Phe Ile Ser Leu Asn Ile  
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 Glu Asp Gly Asn Leu Met Val Arg Tyr Lys Leu Asn Ser Glu Pro Pro  
 1045 1050 1055  
 Lys Glu Lys Gly Ile Arg Asp Thr Ile Asn Asp Gly Lys Asp His Ser  
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 Ile Leu Ile Thr Ile Gly Lys Leu Gln Lys Arg Met Trp Ile Asn Val



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Asn Glu Arg Ser Val Arg Ile Glu Gly Glu Ile Phe Asp Phe Ser Thr	1090	1095	1100	
Tyr Tyr Leu Gly Gly Ile Pro Ile Ala Ile Arg Glu Arg Phe Asn Ile	1105	1110	1115	1120
Ser Thr Pro Ala Phe Gln Gly Cys Met Lys Asn Leu Lys Lys Thr Ser	1125	1130	1135	
Gly Val Val Arg Leu Asn Asp Thr Val Gly Val Thr Lys Lys Cys Ser	1140	1145	1150	
Glu Asp Trp Lys Leu Val Arg Thr Ala Ser Phe Ser Arg Gly Gly Gln	1155	1160	1165	
Met Ser Phe Thr Asn Leu Asp Val Pro Ser Thr Asp Arg Phe Gln Leu	1170	1175	1180	
Ser Phe Gly Phe Gln Thr Phe Gln Pro Ser Gly Thr Leu Leu Asn His	1185	1190	1195	1200
Gln Thr Arg Thr Ser Ser Leu Leu Val Thr Leu Glu Asp Gly His Ile	1205	1210	1215	
Glu Leu Ser Thr Arg Asp Ser Asn Ile Pro Ile Phe Lys Ser Pro Gly	1220	1225	1230	
Thr Tyr Met Asp Gly Leu Leu His His Val Ser Val Ile Ser Asp Thr	1235	1240	1245	
Ser Gly Leu Arg Leu Leu Ile Asp Asp Gln Val Leu Arg Arg Asn Gln	1250	1255	1260	
Arg Leu Pro Ser Phe Ser Asn Ala Gln Gln Ser Leu Arg Leu Gly Gly	1265	1270	1275	1280
Gly His Phe Glu Gly Cys Ile Ser Asn Val Leu Val Gln Arg Phe Ser	1285	1290	1295	
Gln Ser Pro Glu Val Leu Asp Leu Ala Ser Lys Ser Thr Lys Lys Asp	1300	1305	1310	
Ala Ser Leu Gly Gly Cys Ser Leu Asn Lys Pro Pro Phe Leu Met Leu	1315	1320	1325	
Phe Lys Ser Pro Lys Arg Phe Asn Lys Gly Arg Ile Phe Asn Val Asn	1330	1335	1340	
Gln Leu Met Gln Asp Ala Pro Gln Ala Thr Arg Ser Thr Glu Ala Trp	1345	1350	1355	1360
Gln Asp Gly Arg Ser Cys Leu Pro Pro Leu Asn Thr Lys Ala Ser His	1365	1370	1375	
Arg Ala Leu Gln Phe Gly Asp Ser Pro Thr Ser His Leu Leu Leu Lys	1380	1385	1390	
Leu Pro Gln Glu Leu Leu Lys Pro Arg Ser Gln Phe Ser Leu Asp Ile	1395	1400	1405	
Gln Thr Thr Ser Pro Lys Gly Leu Val Phe Tyr Ala Gly Thr Lys Asp				

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 Gly Ala Gly Gly Lys Lys Leu Arg Leu Arg Ser Lys Glu Arg Tyr His  
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 Asp Gly Lys Trp His Thr Val Val Phe Gly Leu Asn Gly Gly Lys Ala  
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 Arg Leu Val Val Asp Gly Leu Arg Ala Gln Glu Gly Ser Leu Pro Gly  
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 Asn Ser Thr Ile Ser Pro Arg Glu Gln Val Tyr Leu Gly Leu Pro Leu  
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 1540 1545 1550  
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 Gly Pro Glu Leu Lys Leu Thr Phe Ser Ile Arg Pro Arg Ser Leu Thr  
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 Gly Val Leu Ile His Val Gly Ser Gln Ser Gly Gln Arg Leu Ser Val  
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 Tyr Met Glu Ala Gly Lys Val Thr Thr Ser Val Ser Ser Asp Ala Gly  
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 Gly Ser Val Thr Ser Ile Thr Pro Lys Gln Ser Leu Cys Asp Gly Gln  
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 Trp His Ser Val Ala Val Ser Ile Lys Gln Arg Ile Leu His Leu Glu  
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 Leu Asp Thr Asp Ser Ser Tyr Thr Val Ala Pro Leu Ser Phe Ser Pro  
 1650 1655 1660  
 Asn Ser Thr Arg Gly Ser Leu His Val Gly Gly Val Pro Asp Lys Leu  
 1665 1670 1675 1680  
 Lys Met Leu Thr Leu Pro Val Trp Asn Ser Phe Phe Gly Cys Leu Lys  
 1685 1690 1695  
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Ala	Ser	Tyr	Met	Glu	Leu	Arg	Pro	Ser	Gln	Gly	Cys	Arg	Pro	Gly	Tyr	
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Tyr	Arg	Asp	Ile	Lys	Ser	Phe	Pro	Ala	Gly	Arg	Ser	Val	Pro	Cys	Asn	
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tgc	aac	gga	cat	tca	aat	aga	tgc	caa	gac	ggc	tcg	gga	gtg	tgc	att	192
Cys	Asn	Gly	His	Ser	Asn	Arg	Cys	Gln	Asp	Gly	Ser	Gly	Val	Cys	Ile	
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aac	tgt	cag	cac	aac	aca	gct	ggg	gag	cac	tgt	gag	cgt	tgc	aag	agg	240
Asn	Cys	Gln	His	Asn	Thr	Ala	Gly	Glu	His	Cys	Glu	Arg	Cys	Lys	Arg	
65					70					75					80	
ggt	tac	tat	gga	agc	gcc	atc	cat	gga	tcc	tgc	agg	gtt	tgc	ccc	tgt	288
Gly	Tyr	Tyr	Gly	Ser	Ala	Ile	His	Gly	Ser	Cys	Arg	Val	Cys	Pro	Cys	
				85					90					95		
cct	cac	acc	aac	agc	ttt	gcc	act	ggc	tgt	gct	gtg	gat	gga	gga	gct	336
Pro	His	Thr	Asn	Ser	Phe	Ala	Thr	Gly	Cys	Ala	Val	Asp	Gly	Gly	Ala	
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Val	Arg	Cys	Ala	Cys	Lys	Pro	Gly	Tyr	Thr	Gly	Ala	Gln	Cys	Glu	Arg	
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Cys	Ala	Pro	Gly	Tyr	Phe	Gly	Asn	Pro	Gln	Lys	Phe	Gly	Gly	Ser	Cys	
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Gln	Pro	Cys	Asn	Cys	Asn	Ser	Asn	Gly	Gln	Phe	Gly	Thr	Cys	Asp	Pro	
145					150					155					160	
cta	act	gga	gac	tgt	gta	agc	caa	gaa	ccc	aaa	gat	ggc	agc	cct	gca	528
Leu	Thr	Gly	Asp	Cys	Val	Ser	Gln	Glu	Pro	Lys	Asp	Gly	Ser	Pro	Ala	
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gaa	gaa	tgt	gat	gac	tgt	gac	agc	tgt	gtg	atg	act	ctc	cta	aat	gac	576
Glu	Glu	Cys	Asp	Asp	Cys	Asp	Ser	Cys	Val	Met	Thr	Leu	Leu	Asn	Asp	
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Leu	Val	Pro	Met	Gly	Glu	Glu	Leu	Ala	Leu	Val	Lys	Ser	Lys	Leu	Gln	
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ggg	ctg	agt	gtg	aac	act	ggt	tct	ctg	gaa	cag	atc	cgg	cat	gtg	gag	672
Gly	Leu	Ser	Val	Asn	Thr	Gly	Ser	Leu	Glu	Gln	Ile	Arg	His	Val	Glu	
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Gly Tyr Tyr Gly Ser 85	Ala Ile His Gly Ser 90	Cys Arg Val Cys Pro 95	Cys
Pro His Thr Asn 100	Ser Phe Ala Thr Gly 105	Cys Ala Val Asp Gly 110	Gly Ala
Val Arg Cys 115	Ala Cys Lys Pro Gly 120	Tyr Thr Gly Ala Gln 125	Cys Glu Arg
Cys Ala Pro Gly Tyr 130	Phe Gly Asn Pro Gln 135	Lys Phe Gly Gly Ser 140	Cys
Gln Pro Cys Asn Cys 145	Asn Ser Asn Gly Gln 150	Phe Gly Thr Cys Asp 155	Pro 160
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Gln Met Ser Phe Thr Asn Leu Asp Val Pro Ser Thr Asp Arg Phe Gln		
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Gln Ala Glu Ala Glu Glu Ala Arg Ser Arg Ala His Ala Val Glu Gly  
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Gln Val Glu Asp Val Val Gly Asn Leu Arg Gln Gly Thr Val Ala Leu  
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Cys	Pro	Cys	Arg	Glu	Gly	Phe	Gly	Gly	Leu	Met	Cys	Ser	Ala	Ala	Ala	
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Gln	Ser	Ala	Gln	Ala	Ala	Gln	Gln	Val	Ser	Asp	Ser	Ser	Arg	Leu	Leu	
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gac	cag	ctc	agg	gac	agc	cgg	aga	gag	gca	gag	agg	ctg	gtg	cgg	cag	2208
Asp	Gln	Leu	Arg	Asp	Ser	Arg	Arg	Glu	Ala	Glu	Arg	Leu	Val	Arg	Gln	
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ggt	ctc	ctt	act	atg	tat	cag	agg	aag	agg	gag	cag	ttt	gaa	aaa	ata	2219	
Gly	Leu	Leu	Thr	Met	Tyr	Gln	Arg	Lys	Arg	Glu	Gln	Phe	Glu	Lys	Ile		
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Gln	Met	Ile	Arg	Ala	Ala	Glu	Glu	Ser	Ala	Ser	Gln	Ile	Gln	Ser	Ser	
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Ile	Gln	Asp	Arg	Val	Ala	Glu	Val	Gln	Gln	Val	Leu	Arg	Pro	Ala	Glu	
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agt gtg aag aca gag gca gag gag ctg ttt ggg gag acc atg gag atg 3467  
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Val Gly Arg Thr Arg Phe Leu Arg Ala Ser Ser Thr Cys Gly Leu Thr  
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Lys Pro Glu Thr Tyr Cys Thr Gln Tyr Gly Glu Trp Gln Met Lys Cys  
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Cys Lys Cys Asp Ser Arg Gln Pro His Asn Tyr Tyr Ser His Arg Val  
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Glu Asn Val Ala Ser Ser Ser Gly Pro Met Arg Trp Trp Gln Ser Gln  
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Asn Asp Val Asn Pro Val Ser Leu Gln Leu Asp Leu Asp Arg Arg Phe  
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Gln Leu Gln Glu Val Met Met Glu Phe Gln Gly Pro Met Pro Ala Gly  
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Gln	Tyr	Leu	Ala	Ala	Asp	Cys	Thr	Ser	Thr	Phe	Pro	Arg	Val	Arg	Gln	165	170	175	
Gly	Arg	Pro	Gln	Ser	Trp	Gln	Asp	Val	Arg	Cys	Gln	Ser	Leu	Pro	Gln	180	185	190	
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Gln	Leu	Arg	Leu	Gln	Gly	Ser	Cys	Phe	Cys	His	Gly	His	Ala	Asp	Arg	260	265	270	
Cys	Ala	Pro	Lys	Pro	Gly	Ala	Ser	Ala	Gly	Pro	Ser	Thr	Ala	Val	Gln	275	280	285	
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Gly	Gln	Asp	Ala	His	Glu	Cys	Gln	Arg	Cys	Asp	Cys	Asn	Gly	His	Ser	325	330	335	
Glu	Thr	Cys	His	Phe	Asp	Pro	Ala	Val	Phe	Ala	Ala	Ser	Gln	Gly	Ala	340	345	350	
Tyr	Gly	Gly	Val	Cys	Asp	Asn	Cys	Arg	Asp	His	Thr	Glu	Gly	Lys	Asn	355	360	365	
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Gly	Leu	Thr	Tyr	Ala	Asn	Pro	Gln	Gly	Cys	His	Arg	Cys	Asp	Cys	Asn	435	440	445	
Ile	Leu	Gly	Ser	Arg	Arg	Asp	Met	Pro	Cys	Asp	Glu	Glu	Ser	Gly	Arg	450	455	460	
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 Cys Asp Pro His<sub>500</sub> Asn Ser Leu Ser Pro<sub>505</sub> Gln Cys Asn Gln Phe<sub>510</sub> Thr Gly  
 Gln Cys Pro<sub>515</sub> Cys Arg Glu Gly Phe<sub>520</sub> Gly Gly Leu Met Cys<sub>525</sub> Ser Ala Ala  
 Ala Ile<sub>530</sub> Arg Gln Cys Pro Asp<sub>535</sub> Arg Thr Tyr Gly Asp<sub>540</sub> Val Ala Thr Gly  
 Cys<sub>545</sub> Arg Ala Cys Asp Cys<sub>550</sub> Asp Phe Arg Gly Thr<sub>555</sub> Glu Gly Pro Gly Cys<sub>560</sub>  
 Asp Lys Ala Ser Gly<sub>565</sub> Arg Cys Leu Cys Arg<sub>570</sub> Pro Gly Leu Thr Gly<sub>575</sub> Pro  
 Arg Cys Asp Gln<sub>580</sub> Cys Gln Arg Gly Tyr<sub>585</sub> Cys Asn Arg Tyr Pro<sub>590</sub> Val Cys  
 Val Ala Cys<sub>595</sub> His Pro Cys Phe Gln<sub>600</sub> Thr Tyr Asp Ala Asp<sub>605</sub> Leu Arg Glu  
 Gln Ala<sub>610</sub> Leu Arg Phe Gly Arg<sub>615</sub> Leu Arg Asn Ala Thr<sub>620</sub> Ala Ser Leu Trp  
 Ser Gly Pro Gly Leu Glu<sub>630</sub> Asp Arg Gly Leu Ala<sub>635</sub> Ser Arg Ile Leu Asp<sub>640</sub>  
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 Val Thr Glu Gln<sub>660</sub> Glu Val Ala Gln<sub>665</sub> Val Ala Ser Ala Ile Leu<sub>670</sub> Ser Leu  
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 Thr Leu<sub>690</sub> Ser Leu Pro Arg Asp<sub>695</sub> Leu Glu Ser Leu Asp<sub>700</sub> Arg Ser Phe Asn  
 Gly Leu Leu Thr Met Tyr<sub>710</sub> Gln Arg Lys Arg Glu<sub>715</sub> Gln Phe Glu Lys Ile<sub>720</sub>  
 Ser Ser Ala Asp Pro<sub>725</sub> Ser Gly Ala Phe Arg<sub>730</sub> Met Leu Ser Thr Ala<sub>735</sub> Tyr  
 Glu Gln Ser Ala<sub>740</sub> Gln Ala Ala Gln Gln<sub>745</sub> Val Ser Asp Ser Ser<sub>750</sub> Arg Leu  
 Leu Asp Gln<sub>755</sub> Leu Arg Asp Ser Arg<sub>760</sub> Arg Glu Ala Glu Arg<sub>765</sub> Leu Val Arg  
 Gln Ala<sub>770</sub> Gly Gly Gly Gly Gly<sub>775</sub> Thr Gly Ser Pro Lys<sub>780</sub> Leu Val Ala Leu  
 Arg<sub>785</sub> Leu Glu Met Ser Ser<sub>790</sub> Leu Pro Asp Leu Thr<sub>795</sub> Pro Thr Phe Asn Lys<sub>800</sub>  
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Val Ala Glu Gln Leu Arg Gly Phe Asn Ala Gln Leu Gln Arg Thr Arg  
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Gln Met Ile Arg Ala Ala Glu Glu Ser Ala Ser Gln Ile Gln Ser Ser  
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Ala Gln Arg Leu Glu Thr Gln Val Ser Ala Ser Arg Ser Gln Met Glu  
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Glu Asp Val Arg Arg Thr Arg Leu Leu Ile Gln Gln Val Arg Asp Phe  
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Leu Thr Asp Pro Asp Thr Asp Ala Ala Thr Ile Gln Glu Val Ser Glu  
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Ala Val Leu Ala Leu Trp Leu Pro Thr Asp Ser Ala Thr Val Leu Gln  
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Lys Met Asn Glu Ile Gln Ala Ile Ala Ala Arg Leu Pro Asn Val Asp  
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Leu Val Leu Ser Gln Thr Lys Gln Asp Ile Ala Arg Ala Arg Arg Leu  
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Gln Ala Glu Ala Glu Glu Ala Arg Ser Arg Ala His Ala Val Glu Gly  
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Gln Val Glu Asp Val Val Gly Asn Leu Arg Gln Gly Thr Val Ala Leu  
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Gln Glu Ala Gln Asp Thr Met Gln Gly Thr Ser Arg Ser Leu Arg Leu  
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Ile Gln Asp Arg Val Ala Glu Val Gln Gln Val Leu Arg Pro Ala Glu  
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Lys Leu Val Thr Ser Met Thr Lys Gln Leu Gly Asp Phe Trp Thr Arg  
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Met Glu Glu Leu Arg His Gln Ala Arg Gln Gln Gly Ala Glu Ala Val  
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Gln Ala Gln Gln Leu Ala Glu Gly Ala Ser Glu Gln Ala Leu Ser Ala  
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Gln Glu Gly Phe Glu Arg Ile Lys Gln Lys Tyr Ala Glu Leu Lys Asp  
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Arg Leu Gly Gln Ser Ser Met Leu Gly Glu Gln Gly Ala Arg Ile Gln  
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Ser Val Lys Thr Glu Ala Glu Glu Leu Phe Gly Glu Thr Met Glu Met  
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Met Asp Arg Met Lys Asp Met Glu Leu Glu Leu Leu Arg Gly Ser Gln  
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Pro Glu Thr Tyr Cys Thr Gln Tyr Gly Glu Trp Gln Met Lys Cys Cys  
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Tyr Leu Ala Ala Asp Cys Thr Ser Thr Phe Pro Arg Val Arg Gln Gly  
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Ala	Pro	Lys	Pro	Gly	Ala	Ser	Ala	Gly	Pro	Ser	Thr	Ala	Val	Gln	Val	
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Asp	Arg	Arg	Phe	Gln	Leu	Gln	Glu	Val	Met	Met	Glu	Phe	Gln	Gly	Pro		
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atg	cct	gcc	ggc	atg	ctg	att	gag	cgc	tcc	tca	gac	ttc	ggt	aag	acc	491	
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tgg	cga	gtg	tac	cag	tac	ctg	gct	gcc	gac	tgc	acc	tcc	acc	ttc	cct	539	
Trp	Arg	Val	Tyr	Gln	Tyr	Leu	Ala	Ala	Asp	Cys	Thr	Ser	Thr	Phe	Pro		
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cgg	gtc	cgc	cag	ggt	cgg	cct	cag	agc	tgg	cag	gat	ggt	cgg	tgc	cag	587	
Arg	Val	Arg	Gln	Gly	Arg	Pro	Gln	Ser	Trp	Gln	Asp	Val	Arg	Cys	Gln		
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Ser	Leu	Pro	Gln	Arg	Pro	Asn	Ala	Arg	Leu	Asn	Gly	Gly	Lys	Val	Gln		
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Arg	Leu	Ala	Pro	Val	Pro	Gln	Arg	Gly	Tyr	His	Pro	Pro	Ser	Ala	Tyr		
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Tyr	Ala	Val	Ser	Gln	Leu	Arg	Leu	Gln	Gly	Ser	Cys	Phe	Cys	His	Gly		
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cat	gct	gat	cgc	tgc	gca	ccc	aag	cct	ggg	gcc	tct	gca	ggc	ccc	tcc	875	
His	Ala	Asp	Arg	Cys	Ala	Pro	Lys	Pro	Gly	Ala	Ser	Ala	Gly	Pro	Ser		
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Gly	Pro	Asn	Cys	Glu	Arg	Cys	Ala	Pro	Phe	Tyr	Asn	Asn	Arg	Pro	Trp	
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Asn	Gly	His	Ser	Glu	Thr	Cys	His	Phe	Asp	Pro	Ala	Val	Phe	Ala	Ala	
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Ser	Gln	Gly	Ala	Tyr	Gly	Gly	Val	Cys	Asp	Asn	Cys	Arg	Asp	His	Thr	
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Glu	Gly	Lys	Asn	Cys	Glu	Arg	Cys	Gln	Leu	His	Tyr	Phe	Arg	Asn	Arg	
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Cys	Val	Cys	Lys	Glu	His	Val	Gln	Gly	Glu	Arg	Cys	Asp	Leu	Cys	Lys	
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ccg	ggc	ttc	act	gga	ctc	acc	tac	gcc	aac	ccg	cag	ggc	tgc	cac	cgc	1355
Pro	Gly	Phe	Thr	Gly	Leu	Thr	Tyr	Ala	Asn	Pro	Gln	Gly	Cys	His	Arg	
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Cys	Asp	Cys	Asn	Ile	Leu	Gly	Ser	Arg	Arg	Asp	Met	Pro	Cys	Asp	Glu	
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Asp	Gln	Cys	Ala	Pro	Tyr	His	Trp	Lys	Leu	Ala	Ser	Gly	Gln	Gly	Cys	
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Glu	Pro	Cys	Ala	Cys	Asp	Pro	His	Asn	Ser	Leu	Ser	Pro	Gln	Cys	Asn	
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Gln	Phe	Thr	Gly	Gln	Cys	Pro	Cys	Arg	Glu	Gly	Phe	Gly	Gly	Leu	Met	
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Cys	Ser	Ala	Ala	Ala	Ile	Arg	Gln	Cys	Pro	Asp	Arg	Thr	Tyr	Gly	Asp	
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ggc Gly	ccg Pro	ggc Gly	tgc Cys	gac Asp	aag Lys	gca Ala	tca Ser	ggc Gly	cgc Arg	tgc Cys	ctc Leu	tgc Cys	cgc Arg	cct Pro	ggc Gly	1739
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625					630					635					640	
agc Ser	agc Ser	ccc Pro	gca Ala	gtc Val	aca Thr	gag Glu	cag Gln	gag Glu	gtg Val	gct Ala	cag Gln	gtg Val	gcc Ala	agt Ser	gcc Ala	2027
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		675					680				685					
aga Arg	agc Ser	ttc Phe	aat Asn	ggc Gly	ctc Leu	ctt Leu	act Thr	atg Met	tat Tyr	cag Gln	agg Arg	aag Lys	agg Arg	gag Glu	cag Gln	2171
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Val	Arg	Asp	Phe	Leu	Thr	Asp	Pro	Asp	Thr	Asp	Ala	Ala	Thr	Ile	Gln	
			900					905					910			
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Glu	Val	Ser	Glu	Ala	Val	Leu	Ala	Leu	Trp	Leu	Pro	Thr	Asp	Ser	Ala	
		915					920					925				
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Glu	Leu	Lys	Asp	Arg	Leu	Gly	Gln	Ser	Ser	Met	Leu	Gly	Glu	Gln	Gly	
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 Cys Gly Leu Thr Lys Pro Glu Thr Tyr Cys Thr Gln Tyr Gly Glu Trp  
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 Gln Met Lys Cys Cys Lys Cys Asp Ser Arg Gln Pro His Asn Tyr Tyr  
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 Ser His Arg Val Glu Asn Val Ala Ser Ser Ser Gly Pro Met Arg Trp  
 85 90 95

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 Arg Val Arg Gln Gly Arg Pro Gln Ser Trp Gln Asp Val Arg Cys Gln  
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 Ser Leu Pro Gln Arg Pro Asn Ala Arg Leu Asn Gly Gly Lys Val Gln  
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 Leu Asn Leu Met Asp Leu Val Ser Gly Ile Pro Ala Thr Gln Ser Gln  
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 Lys Ile Gln Glu Val Gly Glu Ile Thr Asn Leu Arg Val Asn Phe Thr  
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 Arg Leu Ala Pro Val Pro Gln Arg Gly Tyr His Pro Pro Ser Ala Tyr  
 225 230 235 240  
 Tyr Ala Val Ser Gln Leu Arg Leu Gln Gly Ser Cys Phe Cys His Gly  
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 His Ala Asp Arg Cys Ala Pro Lys Pro Gly Ala Ser Ala Gly Pro Ser  
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 Thr Ala Val Gln Val His Asp Val Cys Val Cys Gln His Asn Thr Ala  
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 Gly Pro Asn Cys Glu Arg Cys Ala Pro Phe Tyr Asn Asn Arg Pro Trp  
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 Arg Pro Ala Glu Gly Gln Asp Ala His Glu Cys Gln Arg Cys Asp Cys  
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 Asn Gly His Ser Glu Thr Cys His Phe Asp Pro Ala Val Phe Ala Ala  
 325 330 335  
 Ser Gln Gly Ala Tyr Gly Gly Val Cys Asp Asn Cys Arg Asp His Thr  
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 Glu Gly Lys Asn Cys Glu Arg Cys Gln Leu His Tyr Phe Arg Asn Arg  
 355 360 365  
 Arg Pro Gly Ala Ser Ile Gln Glu Thr Cys Ile Ser Cys Glu Cys Asp  
 370 375 380  
 Pro Asp Gly Ala Val Pro Gly Ala Pro Cys Asp Pro Val Thr Gly Gln  
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 Cys Val Cys Lys Glu His Val Gln Gly Glu Arg Cys Asp Leu Cys Lys  
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 Pro Gly Phe Thr Gly Leu Thr Tyr Ala Asn Pro Gln Gly Cys His Arg  
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Cys Asp Cys Asn Ile Leu Gly Ser Arg Arg Asp Met Pro Cys Asp Glu  
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 Arg Ile Leu Asp Ala Lys Ser Lys Ile Glu Gln Ile Arg Ala Val Leu  
 625 630 635 640  
 Ser Ser Pro Ala Val Thr Glu Gln Glu Val Ala Gln Val Ala Ser Ala  
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 Ile Leu Ser Leu Arg Arg Thr Leu Gln Gly Leu Gln Leu Asp Leu Pro  
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 Leu Glu Glu Glu Thr Leu Ser Leu Pro Arg Asp Leu Glu Ser Leu Asp  
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 Ile Ser Cys Pro Gly Glu Leu Cys Pro Gln Asp Asn Gly Thr Ala Cys  
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 Gly Ser Arg Cys Arg Gly Val Leu Pro Arg Ala Gly Gly Ala Phe Leu  
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cta Leu 135	gac Asp	tcc Ser	aag Lys	tgt Cys	gac Asp 140	tgt Cys	gac Asp	cca Pro	gct Ala	ggc Gly 145	atc Ile	gca Ala	ggg Gly	ccc Pro	tgt Cys 150	487
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gat Asp	ggg Gly	tgt Cys	cga Arg 170	tca Ser	ggt Gly	tac Tyr	tat Tyr	aat Asn 175	ctg Leu	gat Asp	ggg Gly	ggg Gly	aac Asn 180	cct Pro	gag Glu	583
ggc Gly	tgt Cys	acc Thr 185	cag Gln	tgt Cys	ttc Phe	tgc Cys	tat Tyr 190	ggg Gly	cat His	tca Ser	gcc Ala	agc Ser 195	tgc Cys	cgc Arg	agc Ser	631
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gtt Val 215	gat Asp	ggc Gly	tgg Trp	aag Lys	gct Ala 220	gtc Val	caa Gln	cga Arg	aat Asn	ggg Gly 225	tct Ser	cct Pro	gca Ala	aag Lys	ctc Leu 230	727
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gac Asp	cct Pro	gtc Val	tat Tyr 250	ttt Phe	gtg Val	gct Ala	cct Pro	gcc Ala 255	aaa Lys	ttt Phe	ctt Leu	ggg Gly 260	aat Asn 260	caa Gln	cag Gln	823
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cgg Arg 295	atc Ile	aca Thr	gct Ala	ccc Pro	ttg Leu 300	atg Met	cca Pro	ctt Leu	ggc Gly 305	aag Lys	aca Thr	ctg Leu	cct Pro	tgt Cys	ggg Gly 310	967

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Trp	Ser	Pro	Gln	Leu	Ser	Tyr	Phe	Glu	Tyr	Arg	Arg	Leu	Leu	Arg	Asn	
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Pro	Ala	Pro	Trp	Val	Glu	Gln	Cys	Ile	Cys	Pro	Val	Gly	Tyr	Lys	Gly	
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Gln	Phe	Cys	Gln	Asp	Cys	Ala	Ser	Gly	Tyr	Lys	Arg	Asp	Ser	Ala	Arg	
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Ala	Cys	Asp	Pro	Asp	Thr	Gly	Asp	Cys	Tyr	Ser	Gly	Asp	Glu	Asn	Pro	
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Ser	Val	Met	Pro	Glu	Thr	Glu	Glu	Val	Val	Cys	Asn	Asn	Cys	Pro	Pro	
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Cys	Asn	Asn	Asn	Val	Asp	Pro	Ser	Ala	Ser	Gly	Asn	Cys	Asp	Arg	Leu	
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## 99274Cseq

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gta Val	gga Gly	tgt Cys 585	cga Arg	agt Ser	gat Asp	ggc Gly 590	acc Thr	tgt Cys	gtt Val	tgc Cys	aag Lys	cca Pro 595	gga Gly	ttt Phe	ggt Gly	1831
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caa Gln 615	gtg Val	aag Lys	att Ile	cag Gln	atg Met 620	gat Asp	cag Gln	ttt Phe	atg Met	cag Gln 625	cag Gln	ctt Leu	cag Gln	aga Arg	atg Met 630	1927
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Gln	Glu	Ala	Leu	Ser	Met	Gly	Asn	Ala	Thr	Phe	Tyr	Glu	Val	Glu	Ser	
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Ile	Leu	Lys	Asn	Leu	Arg	Glu	Phe	Asp	Leu	Gln	Val	Asp	Asn	Arg	Lys	
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Ala	Glu	Ala	Glu	Glu	Ala	Met	Lys	Arg	Leu	Ser	Tyr	Ile	Ser	Gln	Lys	
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Thr Glu Ala Gln Lys Val Asp Thr Arg Ala Lys Asn Ala Gly Val Thr  
1080 1085 1090

atc caa gac aca ctc aac aca tta gac ggc ctc ctg cat ctg atg gac 3367  
Ile Gln Asp Thr Leu Asn Thr Leu Asp Gly Leu Leu His Leu Met Asp  
1095 1100 1105 1110

cag cct ctc agt gta gat gaa gag ggg ctg gtc tta ctg gag cag aag 3415  
Gln Pro Leu Ser Val Asp Glu Glu Gly Leu Val Leu Leu Glu Gln Lys  
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1160 1165 1170

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atgt 3720

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Lys Ser Arg Gln Cys Ile Phe Asp Arg Glu Leu His Arg Gln Thr Gly  
35 40 45

Asn Gly Phe Arg Cys Leu Asn Cys Asn Asp Asn Thr Asp Gly Ile His  
50 55 60

Cys Glu Lys Cys Lys Asn Gly Phe Tyr Arg His Arg Glu Arg Asp Arg  
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Cys Leu Pro Cys Asn Cys Asn Ser Lys Gly Ser Leu Ser Ala Arg Cys  
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99274Cseq

Asp	Asn	Ser	Gly	Arg	Cys	Ser	Cys	Lys	Pro	Gly	Val	Thr	Gly	Ala	Arg
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Thr	Gln	Asp	Gln	Arg	Leu	Leu	Asp	Ser	Lys	Cys	Asp	Cys	Asp	Pro	Ala
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Asp	Gly	Gly	Asn	Pro	Glu	Gly	Cys	Thr	Gln	Cys	Phe	Cys	Tyr	Gly	His
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Ser	Thr	Phe	His	Gln	Asp	Val	Asp	Gly	Trp	Lys	Ala	Val	Gln	Arg	Asn
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Gly	Ser	Pro	Ala	Lys	Leu	Gln	Trp	Ser	Gln	Arg	His	Gln	Asp	Val	Phe
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Arg	Pro	Val	Ser	Gly	Ala	Pro	Ala	Pro	Trp	Val	Glu	Gln	Cys	Ile	Cys
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Pro	Val	Gly	Tyr	Lys	Gly	Gln	Phe	Cys	Gln	Asp	Cys	Ala	Ser	Gly	Tyr
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Lys	Arg	Asp	Ser	Ala	Arg	Leu	Gly	Pro	Phe	Gly	Thr	Cys	Ile	Pro	Cys
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Asn	Cys	Gln	Gly	Gly	Gly	Ala	Cys	Asp	Pro	Asp	Thr	Gly	Asp	Cys	Tyr
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Ser Gly Asp Glu Asn Pro Asp Ile Glu Cys Ala Asp Cys Pro Ile Gly  
435 440 445

Phe Tyr Asn Asp Pro His Asp Pro Arg Ser Cys Lys Pro Cys Pro Cys  
450 455 460

His Asn Gly Phe Ser Cys Ser Val Met Pro Glu Thr Glu Glu Val Val  
465 470 475 480

Cys Asn Asn Cys Pro Pro Gly Val Thr Gly Ala Arg Cys Glu Leu Cys  
485 490 495

Ala Asp Gly Tyr Phe Gly Asp Pro Phe Gly Glu His Gly Pro Val Arg  
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Pro Cys Gln Pro Cys Gln Cys Asn Asn Asn Val Asp Pro Ser Ala Ser  
515 520 525

Gly Asn Cys Asp Arg Leu Thr Gly Arg Cys Leu Lys Cys Ile His Asn  
530 535 540

Thr Ala Gly Ile Tyr Cys Asp Gln Cys Lys Ala Gly Tyr Phe Gly Asp  
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Pro Leu Ala Pro Asn Pro Ala Asp Lys Cys Arg Ala Cys Asn Cys Asn  
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Pro Met Gly Ser Glu Pro Val Gly Cys Arg Ser Asp Gly Thr Cys Val  
580 585 590

Cys Lys Pro Gly Phe Gly Gly Pro Asn Cys Glu His Gly Ala Phe Ser  
595 600 605

Cys Pro Ala Cys Tyr Asn Gln Val Lys Ile Gln Met Asp Gln Phe Met  
610 615 620

Gln Gln Leu Gln Arg Met Glu Ala Leu Ile Ser Lys Ala Gln Gly Gly  
625 630 635 640

Asp Gly Val Val Pro Asp Thr Glu Leu Glu Gly Arg Met Gln Gln Ala  
645 650 655

Glu Gln Ala Leu Gln Asp Ile Leu Arg Asp Ala Gln Ile Ser Glu Gly  
660 665 670

Ala Ser Arg Ser Leu Gly Leu Gln Leu Ala Lys Val Arg Ser Gln Glu  
675 680 685

Asn Ser Tyr Gln Ser Arg Leu Asp Asp Leu Lys Met Thr Val Glu Arg  
690 695 700

Val Arg Ala Leu Gly Ser Gln Tyr Gln Asn Arg Val Arg Asp Thr His  
705 710 715 720

Arg Leu Ile Thr Gln Met Gln Leu Ser Leu Ala Glu Ser Glu Ala Ser  
725 730 735

Leu Gly Asn Thr Asn Ile Pro Ala Ser Asp His Tyr Val Gly Pro Asn  
740 745 750

Gly Phe Lys Ser Leu Ala Gln Glu Ala Thr Arg Leu Ala Glu Ser His  
755 760 765

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Val Glu Ser Ala Ser Asn Met Glu Gln Leu Thr Arg Glu Thr Glu Asp  
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Tyr Ser Lys Gln Ala Leu Ser Leu Val Arg Lys Ala Leu His Glu Gly  
785 790 795 800

Val Gly Ser Gly Ser Gly Ser Pro Asp Gly Ala Val Val Gln Gly Leu  
805 810 815

Val Glu Lys Leu Glu Lys Thr Lys Ser Leu Ala Gln Gln Leu Thr Arg  
820 825 830

Glu Ala Thr Gln Ala Glu Ile Glu Ala Asp Arg Ser Tyr Gln His Ser  
835 840 845

Leu Arg Leu Leu Asp Ser Val Ser Pro Leu Gln Gly Val Ser Asp Gln  
850 855 860

Ser Phe Gln Val Glu Glu Ala Lys Arg Ile Lys Gln Lys Ala Asp Ser  
865 870 875 880

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Gln Val Asp Asn Arg Lys Ala Glu Ala Glu Glu Ala Met Lys Arg Leu  
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 Ala Pro Ala Pro Trp Val Glu Gln Cys Ile Cys Pro Val Gly Tyr Lys  
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Phe	Leu	Gly	Asn <sub>260</sub>	Gln	Gln	Val	Ser	Tyr <sub>265</sub>	Gly	Gln	Ser	Leu	Ser <sub>270</sub>	Phe	Asp
Tyr	Arg	Val <sub>275</sub>	Asp	Arg	Gly	Gly	Arg <sub>280</sub>	Gln	Pro	Ser	Ala	Tyr <sub>285</sub>	Asp	Val	Ile
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 Page 170

99274Cseq  
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690

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Val Phe Asp Gln Glu Leu His Arg Gln Ala Gly Ser Gly Phe Arg Cys	
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Leu Asn Cys Asn Asp Asn Thr Ala Gly Val His Cys Glu Arg Ser Arg	
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Glu Gly Phe Tyr Gln His Gln Ser Lys Ser Arg Cys Leu Pro Cys Asn	
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gga Gly	ggt Gly	aga Arg	cag Gln 260	ccg Pro	tct Ser	gcc Ala	tac Tyr	gat Asp 265	gtg Val	atc Ile	ctg Leu	gaa Glu	ggt Gly 270	gct Ala	ggt Gly	816
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ggg Gly 290	atc Ile	aca Thr	aag Lys	act Thr	tac Tyr	aca Thr 295	ttc Phe	aga Arg	ctg Leu	aat Asn	gaa Glu 300	cat His	cca Pro	agc Ser	agt Ser	912
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 aaaa 5057

&lt;210&gt; 36

&lt;211&gt; 1171

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 36

Thr Ser Arg Arg Glu Val Cys Asp Cys Asn Gly Lys Ser Arg Gln Cys  
 1 5 10 15  
 Val Phe Asp Gln Glu Leu His Arg Gln Ala Gly Ser Gly Phe Arg Cys  
 20 25 30  
 Leu Asn Cys Asn Asp Asn Thr Ala Gly Val His Cys Glu Arg Ser Arg  
 35 40 45  
 Glu Gly Phe Tyr Gln His Gln Ser Lys Ser Arg Cys Leu Pro Cys Asn  
 50 55 60  
 Cys His Ser Lys Gly Ser Leu Ser Ala Gly Cys Asp Asn Ser Gly Gln  
 65 70 75 80  
 Cys Arg Cys Lys Pro Gly Val Thr Gly Gln Arg Cys Asp Gln Cys Gln  
 85 90 95  
 Pro Gly Phe His Met Leu Thr Asp Ala Gly Cys Thr Arg Asp Gln Gly  
 100 105 110  
 Gln Leu Asp Ser Lys Cys Asp Cys Asp Pro Ala Gly Ile Ser Gly Pro  
 115 120 125  
 Cys Asp Ser Gly Arg Cys Val Cys Lys Pro Ala Val Thr Gly Glu Arg  
 130 135 140  
 Cys Asp Arg Cys Arg Pro Arg Asp Tyr His Leu Asp Arg Ala Asn Pro  
 145 150 155 160  
 Glu Gly Cys Thr Gln Cys Phe Cys Tyr Gly His Ser Ala Ser Cys His  
 165 170 175  
 Ala Ser Ala Asp Phe Ser Val His Lys Ile Thr Ser Thr Phe Ser Gln  
 180 185 190  
 Asp Val Asp Gly Trp Lys Ala Val Gln Arg Asn Gly Ala Pro Ala Lys  
 195 200 205

## 99274Cseq

Leu His Trp Ser Gln Arg His Arg Asp Val Phe Ser Ser Ala Arg Arg  
 210 215 220  
 Ser Asp Pro Val Tyr Phe Val Ala Pro Ala Lys Phe Leu Gly Asn Gln  
 225 230 235 240  
 Gln Val Ser Tyr Gly Gln Ser Leu Ser Phe Asp Tyr Arg Val Asp Arg  
 245 250 255  
 Gly Gly Arg Gln Pro Ser Ala Tyr Asp Val Ile Leu Glu Gly Ala Gly  
 260 265 270  
 Leu Gln Ile Arg Ala Pro Leu Met Ala Pro Gly Lys Thr Leu Pro Cys  
 275 280 285  
 Gly Ile Thr Lys Thr Tyr Thr Phe Arg Leu Asn Glu His Pro Ser Ser  
 290 295 300  
 His Trp Ser Pro Gln Leu Ser Tyr Phe Glu Tyr Arg Arg Leu Leu Arg  
 305 310 315 320  
 Asn Leu Thr Ala Leu Leu Met Ile Arg Ala Thr Tyr Gly Glu Tyr Ser  
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 Thr Gly Tyr Ile Asp Asn Val Thr Leu Val Ser Ala Arg Pro Val Leu  
 340 345 350  
 Gly Ala Pro Ala Pro Trp Val Glu Arg Cys Val Cys Leu Leu Gly Tyr  
 355 360 365  
 Lys Gly Gln Phe Cys Gln Glu Cys Ala Ser Gly Tyr Lys Arg Asp Ser  
 370 375 380  
 Ala Arg Leu Gly Ala Phe Gly Ala Cys Val Pro Cys Asn Cys Gln Gly  
 385 390 395 400  
 Glu Gly Ala Cys Asp Pro Asp Thr Gly Asp Cys Tyr Ser Gly Asp Glu  
 405 410 415  
 Asn Pro Asp Ile Glu Cys Ala Asp Cys Pro Ile Gly Phe Tyr Asn Asp  
 420 425 430  
 Pro His Asp Pro Arg Ser Cys Lys Pro Cys Pro Cys His Asn Gly Phe  
 435 440 445  
 Ser Cys Ser Val Met Pro Glu Thr Glu Glu Val Val Cys Asn Asn Cys  
 450 455 460  
 Pro Pro Gly Val Thr Gly Ala Arg Cys Glu Leu Cys Ala Asp Gly Phe  
 465 470 475 480  
 Phe Gly Asp Pro Phe Gly Glu His Gly Pro Val Arg Pro Cys Gln Arg  
 485 490 495  
 Cys Gln Cys Asn Asn Asn Val Asp Pro Asn Ala Ser Gly Asn Cys Asp  
 500 505 510  
 Gln Leu Thr Gly Arg Cys Leu Lys Cys Ile Tyr Asn Thr Ala Gly Val  
 515 520 525  
 Tyr Cys Asp Gln Cys Lys Ala Gly Tyr Phe Gly Asp Pro Leu Ala Pro  
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## 99274Cseq

Asn Pro Ala Asp Lys Cys Arg Ala Cys Asn Cys Ser Pro Met Gly Ala  
 545 550 555 560  
 Glu Pro Gly Glu Cys Arg Gly Asp Gly Ser Cys Val Cys Lys Pro Gly  
 565 570 575  
 Phe Gly Ala Phe Asn Cys Asp His Ala Ala Leu Thr Ser Cys Pro Ala  
 580 585 590  
 Cys Tyr Asn Gln Val Lys Ile Gln Met Asp Gln Phe Thr Gln Gln Leu  
 595 600 605  
 Gln Ser Leu Glu Ala Leu Val Ser Lys Ala Gln Gly Gly Gly Gly Gly  
 610 615 620  
 Gly Thr Val Pro Val Gln Leu Glu Gly Arg Ile Glu Gln Ala Glu Gln  
 625 630 635 640  
 Ala Leu Gln Asp Ile Leu Gly Glu Ala Gln Ile Ser Glu Gly Ala Met  
 645 650 655  
 Arg Ala Val Ala Val Arg Leu Ala Lys Ala Arg Ser Gln Glu Asn Asp  
 660 665 670  
 Tyr Lys Thr Arg Leu Asp Asp Leu Lys Met Thr Ala Glu Arg Ile Arg  
 675 680 685  
 Ala Leu Gly Ser Gln His Gln Asn Arg Val Gln Asp Thr Ser Arg Leu  
 690 695 700  
 Ile Ser Gln Met Arg Leu Ser Leu Ala Gly Ser Glu Ala Leu Leu Glu  
 705 710 715 720  
 Asn Thr Asn Ile His Ser Ser Glu His Tyr Val Gly Pro Asn Asp Phe  
 725 730 735  
 Lys Ser Leu Ala Gln Glu Ala Thr Arg Lys Ala Asp Ser His Ala Glu  
 740 745 750  
 Ser Ala Asn Ala Met Lys Gln Leu Ala Arg Glu Thr Glu Asp Tyr Ser  
 755 760 765  
 Lys Gln Ala Leu Ser Leu Ala Arg Lys Leu Leu Ser Gly Gly Gly Gly  
 770 775 780  
 Ser Gly Ser Trp Asp Ser Ser Val Val Gln Gly Leu Met Gly Lys Leu  
 785 790 795 800  
 Glu Lys Thr Lys Ser Leu Ser Gln Gln Leu Ser Leu Glu Gly Thr Gln  
 805 810 815  
 Ala Asp Ile Glu Ala Asp Arg Ser Tyr Gln His Ser Leu Arg Leu Leu  
 820 825 830  
 Asp Ser Ala Ser Gln Leu Gln Gly Val Ser Asp Leu Ser Phe Gln Val  
 835 840 845  
 Glu Ala Lys Arg Ile Arg Gln Lys Ala Asp Ser Leu Ser Asn Leu Val  
 850 855 860  
 Thr Arg Gln Thr Asp Ala Phe Thr Arg Val Arg Asn Asn Leu Gly Asn  
 865 870 875 880



99274Cseq

Trp Glu Lys Glu Thr Arg Gln Leu Leu Gln Thr Gly Lys Asp Arg Arg  
885 890 895

Gln Thr Ser Asp Gln Leu Leu Ser Arg Ala Asn Leu Ala Lys Asn Arg  
900 905 910

Ala Gln Glu Ala Leu Ser Met Gly Asn Ala Thr Phe Tyr Glu Val Glu  
915 920 925

Asn Ile Leu Lys Asn Leu Arg Glu Phe Asp Leu Gln Val Glu Asp Arg  
930 935 940

Lys Ala Glu Ala Glu Glu Ala Met Lys Arg Leu Ser Ser Ile Ser Gln  
945 950 955 960

Lys Val Ala Asp Ala Ser Asp Lys Thr Gln Gln Ala Glu Thr Ala Leu  
965 970 975

Gly Ser Ala Thr Ala Asp Thr Gln Arg Ala Lys Asn Ala Ala Arg Glu  
980 985 990

Ala Leu Glu Ile Ser Ser Glu Ile Glu Leu Glu Ile Gly Ser Leu Asn  
995 1000 1005

Leu Glu Ala Asn Val Thr Ala Asp Gly Ala Leu Ala Met Glu Lys Gly  
1010 1015 1020

Thr Ala Thr Leu Lys Ser Glu Met Arg Glu Met Ile Glu Leu Ala Arg  
1025 1030 1035 1040

Lys Glu Leu Glu Phe Asp Thr Asp Lys Asp Thr Val Gln Leu Val Ile  
1045 1050 1055

Thr Glu Ala Gln Gln Ala Asp Ala Arg Ala Thr Ser Ala Gly Val Thr  
1060 1065 1070

Ile Gln Asp Thr Leu Asn Thr Leu Asp Gly Ile Leu His Leu Ile Asp  
1075 1080 1085

Gln Pro Gly Ser Val Asp Glu Glu Gly Met Met Leu Leu Glu Gln Gly  
1090 1095 1100

Leu Phe Gln Ala Lys Thr Gln Ile Asn Ser Arg Leu Arg Pro Leu Met  
1105 1110 1115 1120

Ser Asp Leu Glu Glu Arg Val Arg Arg Gln Arg Asn His Leu His Leu  
1125 1130 1135

Leu Glu Thr Ser Ile Asp Gly Ile Leu Ala Asp Val Lys Asn Leu Glu  
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Asn Ile Arg Asp Asn Leu Pro Pro Gly Cys Tyr Asn Thr Gln Ala Leu  
1155 1160 1165

Glu Gln Gln  
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